INSURING ACTS OF GOD

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EPISODE 12 – Featuring Mr Ernst Rauch, Chief Climate and Geo Scientist at Munich Re

In insurance lingo, an "Act of God" is an event outside of human control or activity, such as natural disasters. With the growing frequency of such "Acts of God" – amplified by acts of men – the question of the insurability of climate risks is front and centre. In this new episode of 2050 Investors, Kokou Agbo-Bloua takes on this key topic and investigates how the insurance industry has been adapting to meet the challenge. He brings in Mr Ernst Rauch, Chief Climate and Geo Scientist at Munich Re, to go one step further.

SOCIETE GENERALE

2050 INVESTORS – EPISODE 12 SCRIPT

Can the insurance industry survive Acts of God?

Welcome to 2050 Investors, the podcast that deciphers economic and market mega-trends to meet tomorrow's challenges.

I'm Kokou Agbo-Bloua, I head up Economics, Cross-asset and Quant Research at Societe Generale.

In each episode of 2050 Investors, I'll investigate a key mega-trend that relates to the Economy, the Planet, Markets and You.

(Beginning of episode 12)

In ancient Greece around 600 BC, Delphi was a religious sanctuary dedicated to the god Apollo, god of the sun and light but also prophecy and knowledge. There, resided the famous Pythia, the Oracle of Delphi. She was believed to channel prophecies from Apollo himself. Countless rulers and common people alike sought her consultation, for new ventures, perilous trips across the sea, important political decisions.

However, Pythia did not have exclusivity, predicting the future was a crowded business. It is still the case today. Others sought the protection of Soteria, the goddess of safety and preservation from harm. Viking conquerors who yearned for Valhalla and to die in battle, prayed to Thor, god of thunder or the Valkyries.

An interesting article on priceonomics.com entitled 'How Maritime Insurance Built Ancient Rome', shows that the Greeks **invented the first form of insurance** so that Poseidon, god of the sea, storms, and earthquakes, could never bankrupt their important shipping expeditions.

Sea voyages were essential back then as they provided regular shipments of grain at scale from Egypt without which heavily populated cities like Rome would never have survived. However, they were very risky. Ships would often sink, be attacked by pirates, or suffer delays due to bad weather conditions. **Maritime insurance was therefore the oldest form of insurance.**

Today, insurance is simply defined as an arrangement by which a company or the state undertakes to provide a guarantee of compensation for specified loss, damage, illness, or death in return for payment of a specified premium.

Put differently, in exchange of a fee, the insurance industry was to the Oracle of Delphi what Netflix was to Blockbuster or the digital camera to Eastman Kodak. It put the ancient gods out of business.

We may humour them, but the Gods may still have the last laugh. In insurance lingo, there is a concept called "Act of God" defined as an event outside of human control or activity, such as a natural disaster like floods, tornadoes, tsunamis or earthquakes. Insurance companies often limit or exclude coverage for Acts of God but some contracts at higher premium provide full coverage. Hence the importance of reading the small prints. Philosopher Pete Seeger was spot on when he

said “Education Is What You Get from Reading the Small Print in a Contract. Experience Is What You Get from Not Reading It”.

Now, our most loyal listeners will remember the Frog and Climate Change episode, where we discussed the latest IPCC report and the overwhelming evidence that the increasing frequency and severity of these so called **“Acts of God” are very much driven by …hum.. “Acts of Men”.**

So, here are some of the important questions we should all be asking ourselves.

Will climate change make insurance unaffordable in the long run? How can the insurance industry adapt its business model to climate change in a sustainable manner? Does playing God by providing insurance against a more unstable future put the insurance industry at risk of ending up like Icarus who got too close to the Sun? And finally, how is the insurance industry contributing to the fight against climate change and making a positive impact?

Let’s start our investigation.

First, HOW DOES THE INSURANCE INDUSTRY WORK ?

Today, the global insurance industry is over $5.5 trillion in terms of premium and expected to reach $6.5 trillion by 2025 according to statista.com. It is a fundamental and ubiquitous part of the functioning of modern societies, from the personal to the professional sphere.

It allows households and businesses to mitigate, manage and transfer financial risks of loss which gives everyone the confidence to take risks in the first place. Think about your life and health insurance, Property, and casualty insurance such as house insurance, car insurance, travel insurance, hospital liability insurance, journalists’ libel insurance to name just a few.

In financial markets, the concept of ‘risk and return’ is deeply ingrained in the very fabric of investing and risk taking. We all know the adage of ‘no pain, no gain’, ‘high risk, high return’ and ‘not putting all of your eggs in one basket” when it comes to portfolio construction, insurance and hedging.

Similarly, in every economy, confidence and risk appetite are the building blocks of entrepreneurship. While many new ventures and start-ups have failed, some have grown into industrial behemoths worth trillions of dollars in market capitalisation (ie. Facebook, Apple , Amazon, GE, IBM etc..). They have also created millions of jobs and transformed our way of life. This risk taking eventually contributed to economic growth and progress. This point is well summarized by Mark Zuckerberg when he said “the biggest risk of all is not to take any risks”.

There is a very interesting connection between risk taking, the fear of financial loss and the insurance industry.

Franklin D Roosevelt in his inaugural address in 1933 in the midst of the Great Depression said “ The only thing we have to fear is fear itself” because fear can paralyze risk taking and destroy confidence.

The insurance industry has therefore allowed calculated risk taking and wealth creation to soar because of its role in risk transfer and risk mutualisation. In a nutshell, 'A ship in harbor is safe — but that is not what ships are built for', to quote US businessman and philanthropist, John Shedd.

However, the business model of the insurance industry is upside down compared to other industries. We all know the saying "**Don't count your chickens before they are hatched". Well, insurance companies may seem to that at first glance.**

The 2019 best Guide to understanding the insurance industry on ambest.com makes an interesting comparison between the business cycle of insurance companies and that of other industries.

Insurance companies only know the cost of the product they sell, that is the claim they will have to pay when a bad event occurs at some point in the future. This event occurs by design, after the product is sold in exchange of the premiums paid by the insurance policy holder.

A traditional business typically builds its product by first taking into account input costs: materials, labour and energy for example. Then comes the pricing before selling the product to the market to generate revenues.

Knowing your costs only ex post means insurance companies can therefore suffer significant losses when sudden and wide-spread tail events or Acts of God occur.

The principles of diversification across a large range of policy holders is the trick. "Don't put all your eggs in one basket". But what if all your eggs are on one planet and the planet is on a highway to hell, aka global warming? You might end up with a bunch of boiled eggs instead of chickens. You might also have other more important things to worry about.

Insurance companies are split between Life insurance companies on one side and Property & Casualty insurance on the other. Both provide primary insurance, although the latter is more directly exposed to climate risk than the former. You then have re-insurance companies who provide primary insurers the ability to transfer some of their own risks. They are the gods of the gods.

Ok, so the next question to cover is: how does risk management work in practice then?

According to Investopedia.com, the laws of large numbers used in the pricing and risk modelling of insurance contracts simply argues that the average of a large number of results closely mirrors the expected value, and that difference narrows as more results are introduced. The larger the number of policyholders, and the closer the actual loss per event will be to the expected loss per event.

Actuaries play an important role in this field. Wikipedia describes them as those who deal with the measurement and management of risk and uncertainty. They use their mathematical skills to help measure the probability and risk of future events and predict the financial impact of these events on a business and their clients.

The bottom line is this, being able to predict the future is a matter of survival for the insurance industry. But most models look at the past to predict the future.

So then, how can the insurance business model become sustainable with climate change that is making history every day?

During periods of low incidents of natural catastrophes, insurance claims are low and therefore insurance companies have strong earnings. However, in periods of high claims, results are negatively affected. This leads to a higher repricing of insurance premiums. This in turn triggers an inflow of capital in the sector because of higher expected returns. And the cycle repeats itself.

To quote Vladimir Ilych Lenin, "there are decades where nothing happens and there are weeks where decades happen". In our case, the future is becoming increasingly less stable.

Research by Swiss Re Institute on swissre.com, estimates that in 2021, the global insured natural catastrophe losses rose to $112bn, the fourth highest on record. The biggest losses on record were in 2005 with Hurricane Katrina, in 2011 with earthquakes in Japan and New Zealand, floods in Thailand and finally, the 2017 hurricane season that caused losses ranging from 140 to 160 billion dollars each. Events once expected to occur once every few hundred years are now more likely to occur once every year.

It is not a surprise that insurance companies are heavily regulated when it comes of the asset side of their balance sheet, ie. premiums received are invested in a very conservative way.

And speaking of premiums, insurance companies are very good at pricing risks based on a large database of historical accidents. They have a risk assessment approach based on behaviour, patterns, habits which allows them to mitigate the probability and severity of risks they insure.

Here are some very interesting facts:

- According to the WHO Global status report on Road safety, wearing seat belts reduces the risk of front seat occupant injuries and deaths by 45-50%.
- Researchers from the insurance institute for highway safety found that for every 5mph increase in a highway's speed limit, road fatalities rose by 8.5%.

The bottom line is this: individual actions and decisions do have a significant impact on the probability distribution of risks for society and the affordability of insurance policies.

This is the classic philosophical debate of free will vs. determinism. In other words, whether the future is set or whether free will can alter the future.

This reminds me of the science fiction movie 'Minority Report' with Tom Cruise as the lead character.

It's an action detective thriller set in Washington DC in 2054, where the police uses a psychic technology to arrest and convict murderers before they commit their crimes. They employ Precogs, or Precognitives, who are individuals who possess the psychic ability to see events in the future. A bit like the oracle of Delphi.

Tom cruise plays the head of the Precrime unit and is himself accused of the future murder of a man he hasn't even met. Spoiler alert. Let's just say that he was able to change his future by taking action.

Ok. Now that we have Insurance 101 out of the way, the big question is: How do insurance companies contribute to the fight against climate change?

One popular solution is to stop providing insurance to businesses with high carbon footprints. The goal is to increase the cost of doing business for these companies and force them to change their business models towards more sustainable alternatives with lower carbon footprints.

Clearly, this is a tough question. A few days ago, I was discussing this very topic with my colleague Vikram Gandhi who is an insurance analyst , so clearly an expert on the matter, and he brought up a very interesting report by the Financial Stability Board from November 2020. The report is called "**The implications of climate change for financial stability'** and it has a section that is very relevant to our discussion. It reads as follows:

"Actions taken by individual insurers to reduce their exposure to climate-related risks could have negative consequences for the financial system as a whole. If large numbers of firms significantly increase premiums or withdraw their coverage of certain climate related risks, this might leave households and firms without cover. This might amplify the resulting risks to financial stability."

This is the law of unintended consequences we covered in the Greenflation episode where we saw how decisions to save the planet can backfire. Food for thought.

Now, let's get some further insights from an expert in the field, shall we ? And who better to ask than Mr Ernst Rauch, Munich Re's Chief Climate and Geo scientist.

[Interview starts]

Kokou: Hi, Ernst. How are you doing?

Ernst: Well, thank you very much for having me in the call.

Question 1
Kokou: Excellent. So, let's kick off with a couple of questions. First, what do you do at Munich Re as Chief Climate and Geoscientist?

Ernst: Well, I actually started years ago working in this field of climate change. More on the risk side. So, measuring the risk by developing catastrophe models and assessing probable maximum losses and doing risk pricing. So that's more on the underwriting side. Today my focus has shifted to the business development side and supporting the development of Munich Re's climate change strategy.

Question 2
Kokou: Very interesting point. According to the IPCC report, the physical impacts of climate change have become more severe and more frequent. How has this affected the business model of the insurance industry?

Ernst: Well, Munich Re started already way back in time in the 1970s identifying climate change as a risk of change, meaning that our experience from the past prior to the 1970s was no longer a good guidance to assess the present risk from weather related disaster as climate change has obviously had an impact and is having an ongoing impact on the probability of severe events.

So, we started addressing climate change by the adjustment of our catastrophe models, adjusting our risk management practices, our contractual agreements. So, the whole scope of activities we see as a risk management companies are having.

Having said this, we started actually on the passive side of our balance sheet. So, with the products which we're offering to our clients, primary insurers and corporates, and whenever it was necessary, driven by changing loss patterns. We had to use these learnings, these adjustments then also in our contractual agreement. Sometimes it was more on the pricing side, sometimes on the wording side. But the bottom line is we can only offer risk transfer solutions. So that's the heart of our business model in a sustainable way. So long term, if we take climate change and the impacts as a reality and reflect this reality or this new reality in our terms and conditions and products.

So far, this is much more on the P&C side. So, we see and we analyze these losses from weather related disasters also back to the 1970s. We see the changes both in frequency and the intensity space happening already in some regions in the world and with some perils. And the focus again is on the physical risk. So be it changing flood patterns, more intense storms, rainfalls, but also droughts and wildfires.

Question 3
Kokou: Well, this is quite fascinating because you're describing something that in the world of finance and investing a lot of people point to, which is that history is not a good indicator of future performance and that instead of repeating history, we are making history when it comes to climate risk and climate events. Which leads me to the second question around the regulatory aspect around climate change and the transition risk and how the insurance industry is adapting to that dimension.

Ernst: We have adapted to these changes already years ago and it's an ongoing process. We haven't been waiting for the regulators to jump in and make these regulations, for instance, stress tests on physical risks. But transition risks, as you mentioned, on the asset side of our balance sheet. We have not waited until this is mandatory.

So, we were proactive in order to anticipate changes and already adjust. And we do this in many dimensions, always on both sides of the balance sheet and starting actually with a framework which we call core beliefs. So only once we have this framework in place, only once we have clear convictions how we look at climate change on the impact side, but also on the solution side. What we believe, what we expect is the state of knowledge and we engage in scientific organizations and studies and then we can sort of use these convictions, this framework of beliefs in order to develop a dedicated strategy. And having done this already some time ago, we are ready. And actually, not only ready, we're already contributing with our activities on the reporting side to questions which might be asked in the future by regulators.

Question 4

Kokou: Absolutely. And I think it's quite impressive that you've been able to move ahead and be ahead of the curve in that regard. Now let's move on to how the reinsurance industry itself is contributing to fight against climate change and what is, for example, the carbon footprint of the reinsurance industry?

Ernst: Our own carbon footprint as an industry from our own operational business is relatively small. We talk about tens of thousands of tons of CO2 emissions per year, which is a small number relative to the emissions from the industries which we support, either through our risk transfer solutions, so the insured emissions or through our investments, the financed emissions, they are by orders of magnitude bigger.

Knowing this, and also having committed to the targets of the Paris agreement and ultimately also to what is called the net zero organizations, both sides of the balance sheet, we have started to measure the carbon emissions of certain liabilities which we insure.

So that's on the passive side of the balance sheet. For instance, our direct and facultative oil and gas emissions and we do have a clear target. And we have published this target to our investors to become net zero by 2050, very much in line with the Paris Agreement. But we go beyond this. We not only control our own emissions and have emission reduction targets, with our business solutions, our risk transfer solutions, we help others also to fulfil emission reduction targets. And an example is for instance, with respect to green technologies, be it renewable energies, battery storage solutions, long term battery storage solutions, performance warranties, but also in the hydrogen space, hydrogen technologies and others. These technologies become easier investable if we derisk them with respect to the new risks which are always associated with new technologies. So that's our contribution on the switch towards low and zero carbon technologies.

And on the asset side of our balance sheet, we are more and more investing into low and zero carbon technologies, be it wind farms or PV photovoltaic installations. So, we are aware of these risks. Our own emissions are not significant. As we are a financial service company, we have them only from operations, but we are aware that our clients have significant emissions. We want to help them on their transition if they are interested in this transition towards low and zero emissions.

Question 5
Kokou: One of the recent IPCC reports points to the fact that there are roughly 50 billion tons of CO2 being emitted in the atmosphere today and if you do get the NDC, so the nationally determined contributions, they are not going to be enough to meet the 50% reduction by 2030, which means 7.6% reduction every single year in terms of emission. And this is to be compared with a 5.8% reduction in emissions in 2020 when the world was in hibernation. So, the task is quite significant. So, the question I have for you and it's more about the future: if the current trends of greenhouse gas emissions continues, do you think that climate risk might become uninsurable or simply unaffordable by 2050?

Ernst: Well, if the world continues with emitting carbon dioxide and other greenhouse gases in the same or similar way as we did in the past, then we will in the not-too-distant future exceed the limits of the Paris Agreement, the 1.5 / 2-degree target. And one of the consequences will be that the frequency and or intensity, most likely both, of severe weather-related events and then catastrophes will increase, probably significant depending on the exceedance of these two degrees target or so.

Now will the world become uninsurable? That's more a question of the willingness and the ability to pay the risk premium which will also be needed to be charged in the future. Our industry, the private sector insurance industry can only offer this risk transfer solution, be it in the mitigation field, so around new technologies. Or on the adaptation side, so adapting to the impact on climate change or weather-related catastrophes. We will only be able to offer this in the long run if we can adjust the risk premiums to sort of what we call the technical level, so to the real risk.

Now this could lead indeed sometimes in the future to the situation that the discussion will more be about the availability and the economics of risk transfer solutions. So, does it make sense, if I may take the example of a homeowner, to pay a risk premium to insure my house against flooding in today's prices of thousands of dollars. Probably the answer to many is that doesn't really make sense either. I can't afford because I don't have the money or from an economic perspective, it just doesn't work. And that's much more of an issue. And I think it should be of some concern to our industry and to have a look at these potential developments and send out the clear message: well, the adaptation to this increasing frequency intensity of these events will be key with respect to the question of the affordability. So, we need to reduce the vulnerability of our properties, of our infrastructure, at least in the same way as the hazard.

So, resilience needs to be improved, vulnerability decreased, and then we will have a really long term, stable and sustainable insurance system. I can't see for the near and midterm future that many insurance companies are withdrawing from these risks because they believe it's not insurable. That's not how we look at this. We are actually ready to grow our offerings to provide more capacity in some regions into some perils. But the issue is much more around ‘will the consumers or the businesses sort of be able to finance this risk transfer solutions?’ And that's where we need to engage more in talks with our clients, with our policy makers, and with the society at large.

We're getting more and more requests from our clients, and that's primary insurance companies but it's also corporates, to transfer our knowledge or make our knowledge on climate and climate change strategies available to them. And we do provide the services to our clients to help them developing their own climate related strategies if they want to have these strategies.

What will be more and more important is engaging in partnerships. Really looking at our industry, the private sector, homeowners, business owners, SMEs and industries as a partner in these challenges around climate change. And if we do it together, and if we, coming from the business side, from the industry side and from the insurance industry side, making our challenges transparent. And the one I explained is you know, we need to improve resilience, reduce vulnerability. And if we realize there is sort of a reflection on this topic, I think with this sort of partnerships we not only can be optimistic that we will sort of be successful in tackling climate change, but that we also, and again, that the industries as well as the insurance sector, will bring value to society in this fight against climate change and contributing to economic growth and social welfare.

Kokou: Brilliant. It's a very good perspective on the future, on the collaborative spirit that can help solve the problem and the complexity of the challenge ahead.
Mr. Ernst Rauch, this was a great pleasure of having you on this podcast. Thank you very much.

[Interview ends]

CONCLUSION:

Clearly, a sustainable insurance business is about collaboration and sharing of best practices, knowledge and know-how to build resilience in the face of uncertainty. The use of new technologies and risk assessment advisory to trigger a positive change in the decision-making process of businesses and households are key.

As this investigation has shown, the future might be uncertain, but it is not pre-determined. By changing our actions, we can collectively reduce risks. And when it comes to climate change, I don't know what Pythia, the Oracle of Delphi, has to say, but let me quote the 16th president of the United States, Abraham Lincoln and add a personal twist to it. Pretty daring I know, but here it goes: "**The best way to predict our future is to create it…with positive and sustainable Acts of Men and Women".**

(Credits)

Thank you for listening to this episode of 2050 Investors. Thanks to Mr Ernst Rauch for his interesting insights on the future of the insurance industry and to Vikram Gandhi for his help in researching this topic.

I hope this episode has helped you get a better glimpse of the future of your house insurance. You can find the show on your regular streaming apps. Please subscribe, leave comments and stars anywhere you like and spread the word!

See you at the next episode!

(Disclaimer)

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